

Introduction

Dosing heads on diaphragm Dosing Pumps have relatively large clearance volumes because of the flexible diaphragm outlines. Clearance volumes ("dead spaces") have an adverse effect when starting up (with dry dosing heads) because the vacuum created during the intake (suction) stroke stays low and the dosing medium is not drawn up as far as the head, or takes a long time to be drawn up.

The most marked decreased suction effect occurs in small output dosing pumps or larger dosing pumps with a low stroke setting. Degassing media (E.g: Sodium Hypochlorite, Oxygen-scavenging oxidising agents, etc.) can also cause the dosing pump to stop delivering: it is unable to compress the gas to the operating pressure in order to allow it to escape through the exhaust valve.

Remedy

By specifying a Dosing Head with Automatic Venting, it is possible to let the gas escape continuously during operation at the highest point of the dosing head: under this arrangement some of the dosing medium leaks out during deaeration, but this can be recycled to the storage tank.

Operation

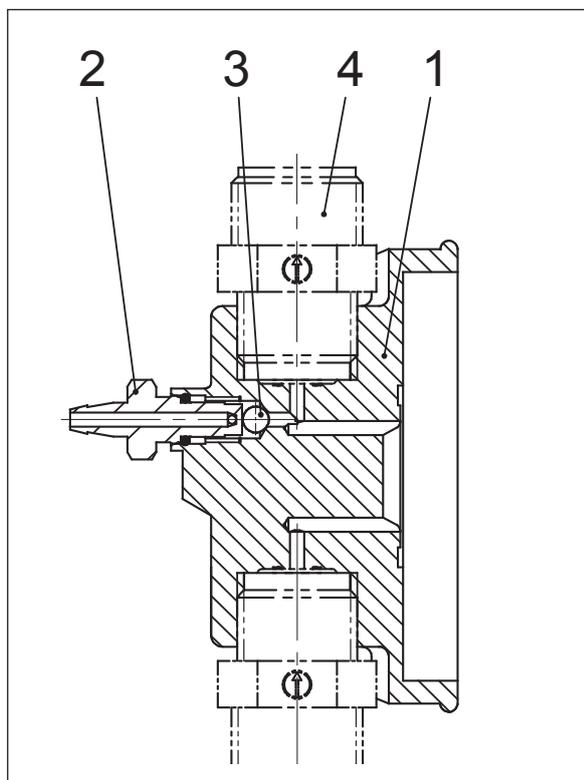
The automatic venting head consists of a ball valve fitted in a horizontal position. Because of the narrow bore, the ball (3) rolls against the seat during the intake stroke and moves away again during the discharge stroke. The length of stroke of the ball is fixed by adjusting the vent screw (2). A 4/6 hose is used to drain the leaking chemical.

Manual Venting at Start-up

Starting from the position at which the vent screw (2) blocks the ball, turn one half turn to the left and operate the dosing pump. Irrespective of the operating pressure which may already prevail at the outlet valve (4), the dosing pump can draw in until the dosing agent escapes from the hose connection of the vent screw (2). The vent screw (2) should then be hand-tightened until nothing escapes, and the dosing pump resumes normal pumping.

Automatic Venting Adjustment

For regular removal of gas accumulations, a certain amount of unavoidable leakage has to be set. The most appropriate quantity of leakage has proved to be in the range of 25-30% of dosing capacity. Therefore, with a MAGDOS DE/DX 2 approximately 0,5-0,7 litres have to be recycled through the deaerator to the storage tank.



The quantity of leakage is dependent on operating pressure: if this is subject to fluctuation the constancy of the leakage and thus of the dosing itself can be improved by installing a back-pressure valve in the pressure line. This valve should be set at approximately 0,5 bar above the highest foreseeable operating pressure.

The leakage quantity is set by carefully turning the vent screw (2).

It is advisable to recycle the leakage liquid to the tank through a 4/6 hose.

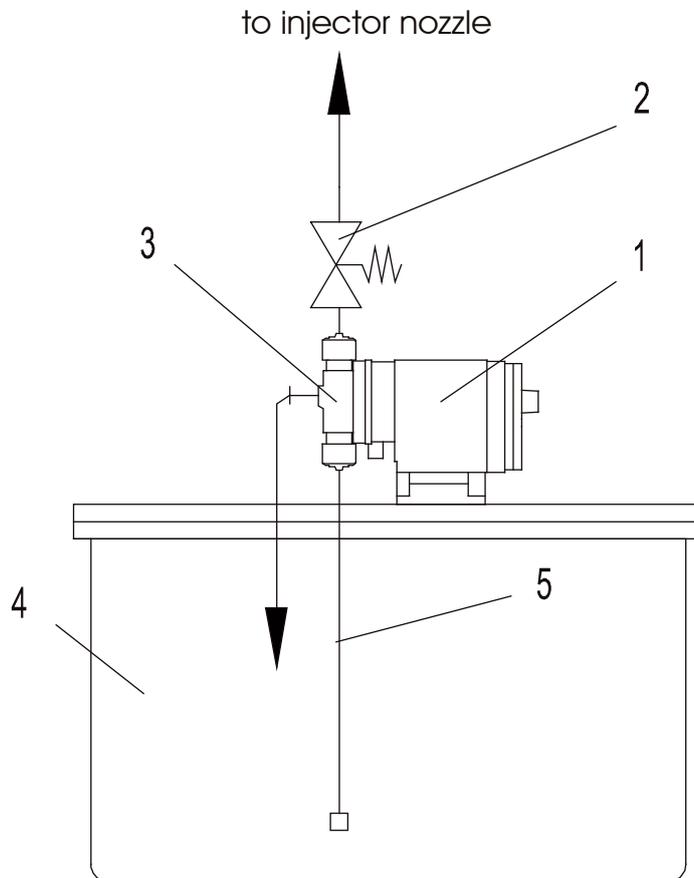
Dosing Pump Type	PVC Dosing Head with Vent Valve Part No.
DE/DX 03/07	13328608
DE/DX 2	13328609
DE/DX 4	
DE/DX 8	13328610
A 3/5/8	
LT 1...6	13337154
LT 02 / 06	37152

Order Example

Because of the de-gassing characteristics of Sodium Hypochlorite, a dosing head with automatic venting must be specified for a magnetic dosing pump DE/DX 4. From the table select the dosing head, part no. 13328609.

Dosing Heads with Automatic Venting

Installation Example



Legend

- 1 Diaphragm Dosing Pump
- 2 Back-Pressure and Relief Valves
- 3 Metering Heads with Automatic Venting
- 4 Tank
- 5 Suction Line